

# Treatment-Seeking Veterans of Iraq and Afghanistan

## Comparison With Veterans of Previous Wars

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**Abstract:** Differences in the characteristics and mental health needs of veterans of the Iraq/Afghanistan war when compared with those of veterans who served in the Persian Gulf war and in the Vietnam war may have important implications for Veterans Affairs (VA) program and treatment planning. Subjects were drawn from administrative data bases of veterans who sought treatment from specialized VA programs for treatment of posttraumatic stress disorder (PTSD). Current Iraq/Afghanistan veterans were compared with 4 samples of outpatient and inpatient Persian Gulf and Vietnam veterans whose admission to treatment was either contemporaneous or noncontemporaneous with their admission. A series of analyses of covariance was used hierarchically to control for program site and age. In analyses of contemporaneous veterans uncontrolled for age, Iraq/Afghanistan veterans differed most notably from Vietnam veterans by being younger, more likely to be female, less likely to be either married or separated/divorced, more often working, less likely to have ever been incarcerated, and less likely to report exposure to atrocities in the military. Regarding clinical status, Iraq/Afghanistan veterans were less often diagnosed with substance abuse disorders, manifested more violent behavior, and had lower rates of VA disability compensation because of PTSD. Differences are more muted in comparisons with Persian Gulf veterans, particularly in those involving noncontemporaneous samples, or those that controlled for age differences. Among recent war veterans with PTSD, social functioning has largely been left intact. There is a window of opportunity, therefore, for developing and focusing on treatment interventions that emphasize the preservation of these social assets.

**Key Words:** Iraq/Afghanistan war, veterans, posttraumatic stress disorder, clinical outcomes.

(*J Nerv Ment Dis* 2008;196: 513–521)

The Department of Veterans Affairs (VA) has primary responsibility for addressing posttraumatic stress disorder (PTSD) and other psychiatric sequelae of war zone experi-

ence among America's veterans. VA is currently experiencing an increasing demand for treatment services from veterans of our latest war in Iraq and Afghanistan, while continuing to provide mental health services to hundreds of thousands of veterans of Vietnam, Korea, World War II and other conflicts (Rosenheck and Fontana, 2007). The current war differs in important ways from previous wars, most notably in that it is an urban insurgency and is embroiled with sectarian religious conflict. The new veterans are now much younger than those from previous wars and a far higher proportion served in National Guard and Reserve units. As a result, these newest veterans may differ in important ways from those of other wars that VA has been treating in still increasing numbers in recent years (Friedman, 2005).

Comparison of characteristics and clinical needs of veterans from the Iraq/Afghanistan war with those of veterans of previous wars may be important for informing program and treatment planning. Similarities would suggest that the same treatment regimens that have been offered to veterans of former wars might prove to be appropriate for new veterans, whereas dissimilarities would suggest that different treatment regimens might be needed for the new cohort.

Since the early 1990s, VA's Northeast Program Evaluation Center (NEPEC) has been responsible for monitoring the treatment of veterans in VA's specialized outpatient and inpatient PTSD programs. In this study, we use these administrative data to compare sociodemographic and clinical characteristics of veterans of the Iraq/Afghanistan war who were treated in these programs to those of veterans of the Persian Gulf war (PER) and the Vietnam war (VIET) who were treated in similar specialized programs. First, we compare Iraq/Afghanistan veterans to veterans from the other wars as they are presenting themselves currently for treatment in specialized VA PTSD programs. This contemporaneous comparison considers veterans of different wars as they would be encountered by treatment staff at the present time.

A clear limitation of this analysis, however, is that it will compare 1 group of veterans shortly after their return from overseas with other groups 15–30 years after their return. Accordingly, in a second set of analyses, we compare current Iraq/Afghanistan veterans to veterans from other wars using assessment and outcome data from the early 1990s. This second set of noncontemporaneous analyses will enable us to compare Iraq/Afghanistan veterans with a group of Persian Gulf veterans shortly after their return from war-zone service, and to Vietnam veterans who, while still 15–20 years

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ISSN: 0022-3018/08/19607-0513

DOI: 10.1097/NMD.0b013e31817cf6e6

past the time of their war zone service, were younger than they are at present. Previous studies have shown a significant increase in the prevalence of PTSD symptoms among some veterans over the first 2 years following war zone service (Wolfe et al., 1999) and that the further removed in time veterans are from their war zone service, the greater is the contribution of current civilian stressors and supports to the prevalence of both PTSD symptoms and comorbid psychiatric disorders (Schnurr et al., 2004).

Our comparisons involve cohorts of veterans presenting to both outpatient and inpatient specialized PTSD programs. Veterans admitted to inpatient status presumably have more serious problems than those treated as outpatients and this could either minimize or increase differences among veterans from different wars. Accordingly, we conduct separate analyses of data from specialized PTSD outpatient and inpatient programs.

Finally, because of the historical spacing of the wars, there are invariably substantial differences in age among the cohorts, although less in the noncontemporaneous set of analyses than in the contemporaneous set. Age has been found to have a widespread influence upon the prevalence of psychiatric symptoms, substance abuse, and social functioning (Kessler et al., 2005a,b). To limit the extent to which cohort dissimilarities might be simply attributable to age, we repeat the preceding comparisons using analyses of covariance (ANCOVAs) to adjust for age.

## METHODS

### Subjects

Subjects were drawn from the NEPEC's administrative data base of veterans who have sought treatment from a VA specialized program for PTSD. Veterans selected for inclusion served in a war zone during only 1 of 3 recent wars: Iraq/Afghanistan referred to as Operation Iraqi Freedom and Operation Enduring Freedom (OIF/OEF), the first PER and VIET. Those who served in more than 1 war were excluded from each cohort. The exclusion criteria were selected so that veterans from all eras would have had war zone exposure and so there would be no confounding of comparisons across war eras because of service in multiple wars. Approximately 85% of the OIF/OEF veterans served in Iraq.

Cohorts for the first analyses were drawn from outpatient and inpatient admission assessments conducted between April 1, 2004 and December 31, 06. These cohorts are designated as the current or contemporaneous samples from each war. For OIF/OEF veterans, this is the only cohort examined and is used in all comparisons. Sample sizes for the current cohorts of outpatients are 6523 for OIF/OEF, 2376 for PER, and 20,170 for VIET. For inpatients, the sample sizes are 562 for OIF/OEF, 565 for PER, and 6217 for VIET.

The period February 1, 1992 to October 31, 1994 was selected for the earlier cohorts of PER and VIET veterans used in the noncontemporaneous comparisons with OIF/OEF veterans, samples assessed 10–14 years before the current cohort. This period was chosen to allow matching of the passage of time from the beginning of the respective wars to the time of assessment for PER and OIF/OEF veterans.

Fortunately, the measures used then and now are largely the same. Samples that were drawn from this time period for outpatients include 1045 PER veterans and 17,094 VIET veterans. Monitoring of inpatients by NEPEC began on June 1, 1993 so that samples were drawn for inpatients from this date to October 31, 1994. Sample sizes for these cohorts of inpatients include 116 PER veterans and 5909 VIET veterans.

### Measures

Measures available from both outpatient and inpatient samples address sociodemographic characteristics, traumatic exposure, and clinical status, and more specifically age, years of education, gender (as female), ethnicity (as white, African American, Latino, or other ethnicity), marital status (as either married, separated/divorced, or never married), working at the time of admission to treatment, and past incarceration. All of the sociodemographic variables are dichotomous except age (range = 16–100) and education (range = 1–26).

Three dichotomous variables reflect veterans' exposure to traumatic events: receiving hostile/friendly fire, participating in atrocities, and witnessing atrocities with no participation.

Clinical status variables include clinical diagnoses of PTSD, alcohol abuse/dependence, drug abuse/dependence, and the total number of comorbid psychiatric disorders, as well as indicators of current medical problems, a recent history of violent behavior, VA service connection for PTSD, VA service connection for a psychiatric disorder other than PTSD, VA service connection for a medical disorder, percent VA disability attributed to PTSD or other psychiatric disorder, and percent VA disability attributed to a medical disorder. All of the clinical status variables are dichotomous, except total number of comorbid psychiatric disorders (range = 0–10) and percent disability attributed to psychiatric (range = 0–100) and medical (range = 0–100) disorders.

Some variables were only available for the inpatient samples. Two global treatment variables measure length of stay in the hospital (range = 1–494 days) and satisfaction with treatment (range = 4–20) (satisfaction was not assessed in the 1992–1994 time period). Satisfaction was measured as the sum of 4 items: how satisfied were you with the care you received from the specialized PTSD programs (1 = not at all satisfied to 5 = completely satisfied); how would you rate the care you received from the specialized PTSD programs (1 = poor to 5 = excellent); if you could have free care outside the VA, would you choose to go to the specialized PTSD programs at this VA again (1 = definitely would not to 4 = definitely would); and would you recommend the specialized PTSD programs at this VA to other veterans if they needed treatment (1 = definitely would not to 4 = definitely would) (Cronbach  $\alpha$  = 0.84).

Other variables available only for inpatient veterans were a lifetime history of a suicide attempt (dichotomous) and continuous measures of clinical status at admission and change in clinical status 4 months after discharge. Clinical status at admission was measured by the Short Form of the Mississippi Scale for PTSD (Fontana and Rosenheck, 1994) (range = 15–55) and the NEPEC PTSD Scale (Fontana and Rosenheck, 1997). The NEPEC Scale (range = 4–20) is a

4-item scale that has been developed for program monitoring to assess intrusive thoughts, flashbacks or nightmares, avoidance of reminders of the war, feelings of numbness or emotional distance from other people, and sleep disturbances, irritability, or hyperarousal (Cronbach  $\alpha = 0.67$ ). It has acceptable construct validity with the Short Mississippi Scale ( $r = 0.61$ ).

Alcohol and drug use were assessed by short versions of indices from the Addiction Severity Index (range = 0–1) (McClellan et al., 1985). Violence (range = 0–4) was assessed by 4 items from the National Vietnam Veterans Readjustment Study (Kulka et al., 1990); and work (range = 0–30) was assessed as the number of days employed for pay during the past month (work was not assessed in this form for the 1992–1994 time period).

Change in clinical status from admission to 4 months following discharge was calculated as the difference between the 2 time points: follow-up status minus admission status. Negative values, therefore, indicate improvement with regard to symptoms (a decrease in symptoms), whereas positive values indicate improvement with regard to work (an increase in work).

## Data Analysis

Data analysis was conducted in the form of 8 sets of ANCOVAs. One set of ANCOVAs controlled for program site only, and another set for veterans' age as well as program site. Both sets of ANCOVAs were conducted for both the contemporaneous and noncontemporaneous data sets and for both outpatient and inpatient programs. Outpatient sites numbered 105 in the noncontemporaneous data set and 86 in the contemporaneous data set. The numbers of inpatient sites were 40 in the contemporaneous data set and 46 in the noncontemporaneous data set. The same sample of OIF veterans was used in both the contemporaneous and noncontemporaneous comparisons with PER and VIET veterans. The time period for the contemporaneous data set was April 1, 2004 to December 31, 2006 for all veterans. The time frame for the noncontemporaneous samples of PER and VIET veterans was February 1, 1992 to October 31, 1994. A significance level of 0.01 was selected for each pair of means among the 3 war eras because of the large number of comparisons.

## RESULTS

### Contemporaneous Comparisons (2004–2006)

The ANCOVAs for contemporaneous samples, controlling for program site, show significant differences among veterans of different war eras for most of the variables (Table 1). Not surprisingly, there are numerous sociodemographic differences among the cohorts that are consistent across outpatient and inpatient cohorts, the most notable being age, with OIF/OEF veterans being youngest, VIET veterans being oldest, and PER veterans falling between the other 2 cohorts. More women are represented in the OIF/OEF and PER war eras compared with the VIET era. Ethnically, the OIF/OEF sample includes proportionally more Latino veterans and fewer African American veterans than the PER and VIET

eras. PER veterans are somewhat more highly educated than veterans from the OIF/OEF and VIET war eras. In terms of marital status, OIF/OEF veterans are less likely to be either married or separated/divorced but more likely to have never married than veterans from the PER and VIET eras, presumably reflecting the large age differences. OIF/OEF veterans appear to be more socially integrated than veterans from the other war eras as they are more often working and have less often been incarcerated than veterans from either the PER or VIET eras.

Veterans differed significantly in their exposure to trauma in the war zone. PER veterans reported less exposure to hostile/friendly fire than OIF/OEF and VIET veterans, although exposure was high in all groups. VIET veterans, however, were more likely to report participating in and witnessing atrocities than both OIF/OEF and PER veterans.

With regard to clinical status, outpatient veterans were diagnosed with both PTSD and alcohol abuse/dependence differentially by war era: OIF/OEF veterans least, VIET veterans most, and PER veterans intermediate. It is possible that the greater time lapse between war exposure and the presentation for treatment, the greater is the opportunity for subsequent events to exacerbate symptomatic distress. It is noteworthy, however, that there was no difference in rates of diagnosis of PTSD and alcohol abuse/dependence among inpatient veterans of different wars.

For the diagnosis of drug abuse/dependence, OIF/OEF veterans were lowest of the war eras regardless of outpatient/inpatient status. OIF/OEF veterans were also lowest among the war eras with respect to several measures of severity and dysfunction: notably, the total number of comorbid psychiatric disorders, the presence of a medical problem, lifetime incidence of a suicide attempt, and percent service connected disability for PTSD.

Considering inpatients only, OIF/OEF veterans had shorter lengths of stay and lower satisfaction with treatment than VIET veterans, but did not differ significantly from PER veterans in these respects. More detailed measures of clinical status at admission and of improvement after treatment show that OIF/OEF veterans had higher levels of PTSD symptoms (as measured by the NEPEC scale) at admission but also showed greater improvement in severity of PTSD symptoms than VIET veterans. OIF/OEF veterans also reported higher levels of violence, alcohol abuse, drug abuse, and work than VIET veterans. PER veterans generally had more severe symptoms than VIET veterans as well. A programmatic shift within the VA may have contributed to the greater severity in clinical status of hospitalized OIF/OEF veterans. Primary care has grown to play a greater role in medical treatment, including the treatment of milder cases of psychiatric distress. This may increasingly be the first choice of OIF/OEF and PER veterans. Alternatively, there may have been a greater mortality of those most affected over the years. The addition of veterans' age as a covariate in the comparison of contemporaneous samples resulted in very few differences from the previous analyses (Table 2).

Among inpatient veterans, however, some differences were rendered nonsignificant by age adjustment including the

**TABLE 1.** OIF/OEF Veterans Versus Contemporaneous PER and VIET Veterans, Controlling for Site

|   | Outpatient |       |        |            |             |             |            | Inpatient |       |       |            |             |             |            |
|---|------------|-------|--------|------------|-------------|-------------|------------|-----------|-------|-------|------------|-------------|-------------|------------|
|   |            |       |        | OIF/OEF    |             |             | <i>p</i> * |           |       |       | OIF/OEF    |             |             | <i>p</i> * |
|   | OIF/OEF    | PER   | VIET   | vs.<br>PER | vs.<br>VIET | vs.<br>VIET |            | OIF/OEF   | PER   | VIET  | vs.<br>PER | vs.<br>VIET | vs.<br>VIET |            |
| <i>N</i>                                | 6523       | 2376  | 20,170 | —          | —           | —           | —          | 562       | 565   | 6217  | —          | —           | —           | —          |
| Age                                     | 32.29      | 41.15 | 58.44  | x          | x           | x           | 0.0001     | 34.17     | 41.15 | 57.59 | x          | x           | x           | 0.0001     |
| Female gender                           | 0.11       | 0.10  | 0.00   | —          | x           | x           | 0.0001     | 0.04      | 0.04  | 0.00  | —          | x           | x           | 0.0001     |
| White                                   | 0.63       | 0.55  | 0.68   | x          | x           | x           | 0.0001     | 0.63      | 0.56  | 0.63  | —          | —           | x           | 0.0040     |
| African American                        | 0.19       | 0.33  | 0.21   | x          | x           | x           | 0.0001     | 0.20      | 0.29  | 0.25  | x          | x           | —           | 0.0020     |
| Latino                                  | 0.11       | 0.07  | 0.07   | x          | x           | —           | 0.0001     | 0.10      | 0.09  | 0.06  | —          | x           | —           | 0.0001     |
| Other ethnicity                         | 0.06       | 0.05  | 0.04   | —          | x           | x           | 0.0001     | 0.07      | 0.06  | 0.05  | —          | —           | —           | NS         |
| Education                               | 12.93      | 13.14 | 12.86  | x          | —           | x           | 0.0001     | 12.83     | 13.07 | 12.81 | —          | —           | x           | 0.0070     |
| Married                                 | 0.50       | 0.54  | 0.64   | x          | x           | x           | 0.0001     | 0.46      | 0.42  | 0.54  | —          | x           | x           | 0.0001     |
| Separated/divorced                      | 0.19       | 0.31  | 0.29   | x          | x           | —           | 0.0001     | 0.27      | 0.40  | 0.38  | x          | x           | —           | 0.0001     |
| Never married                           | 0.31       | 0.14  | 0.05   | x          | x           | x           | 0.0001     | 0.27      | 0.18  | 0.06  | x          | x           | x           | 0.0001     |
| Working at admission                    | 0.60       | 0.47  | 0.33   | x          | x           | x           | 0.0001     | 0.29      | 0.14  | 0.14  | x          | x           | —           | 0.0001     |
| Incarcerated (lifetime)                 | 0.12       | 0.26  | 0.31   | x          | x           | x           | 0.0001     | 0.32      | 0.44  | 0.47  | x          | x           | —           | 0.0001     |
| Received fire                           | 0.95       | 0.84  | 0.96   | x          | x           | x           | 0.0001     | 0.94      | 0.88  | 0.94  | x          | —           | x           | 0.0001     |
| Participated in atrocities              | 0.04       | 0.03  | 0.08   | —          | x           | x           | 0.0001     | 0.10      | 0.06  | 0.15  | —          | x           | x           | 0.0001     |
| Witnessed atrocities                    | 0.13       | 0.16  | 0.26   | —          | x           | x           | 0.0001     | 0.20      | 0.20  | 0.24  | —          | —           | —           | 0.0200     |
| PTSD diagnosis                          | 0.79       | 0.84  | 0.91   | x          | x           | x           | 0.0001     | 0.98      | 0.96  | 0.97  | —          | —           | —           | NS         |
| Alcohol abuse/dependence diagnosis      | 0.20       | 0.25  | 0.29   | x          | x           | x           | 0.0001     | 0.39      | 0.44  | 0.41  | —          | —           | —           | NS         |
| Drug abuse/dependence diagnosis         | 0.06       | 0.13  | 0.13   | x          | x           | —           | 0.0001     | 0.20      | 0.34  | 0.25  | x          | x           | x           | 0.0001     |
| Comorbid diagnoses                      | 1.71       | 2.02  | 1.95   | x          | x           | x           | 0.0001     | 2.23      | 2.50  | 2.25  | x          | —           | x           | 0.0001     |
| Medical problem                         | 0.48       | 0.71  | 0.83   | x          | x           | x           | 0.0001     | 0.57      | 0.70  | 0.81  | x          | x           | x           | 0.0001     |
| Violent behavior                        | 0.24       | 0.23  | 0.18   | —          | x           | x           | 0.0001     | 0.36      | 0.28  | 0.24  | x          | x           | —           | 0.0001     |
| Suicide attempt (lifetime)              | —          | —     | —      | —          | —           | —           | —          | 0.33      | 0.46  | 0.37  | x          | —           | x           | 0.0001     |
| Service connected for PTSD              | 0.13       | 0.23  | 0.35   | x          | x           | x           | 0.0001     | 0.35      | 0.45  | 0.64  | x          | x           | x           | 0.0001     |
| Service connected for other psychiatric | 0.04       | 0.08  | 0.04   | x          | —           | x           | 0.0001     | 0.04      | 0.08  | 0.03  | x          | —           | x           | 0.0001     |
| Service connected for medical           | 0.33       | 0.59  | 0.52   | x          | x           | x           | 0.0001     | 0.40      | 0.57  | 0.50  | x          | x           | x           | 0.0001     |
| Psychiatric disability (%)              | 36.82      | 47.91 | 52.48  | x          | x           | x           | 0.0001     | 47.15     | 61.50 | 56.96 | x          | x           | x           | 0.0001     |
| Medical disability (%)                  | 28.78      | 33.69 | 32.46  | x          | x           | —           | 0.0001     | 26.17     | 31.40 | 26.26 | —          | —           | x           | 0.0020     |
| Length of stay (d)                      | —          | —     | —      | —          | —           | —           | —          | 46.29     | 48.46 | 49.23 | —          | x           | —           | 0.0020     |
| Satisfaction                            | —          | —     | —      | —          | —           | —           | —          | 15.69     | 16.10 | 16.17 | —          | x           | —           | 0.0040     |
| PTSD (miss.) at admission               | —          | —     | —      | —          | —           | —           | —          | 39.55     | 40.21 | 39.09 | —          | —           | x           | 0.0001     |
| PTSD (miss.) change                     | —          | —     | —      | —          | —           | —           | —          | −1.81     | −2.46 | −1.61 | —          | —           | —           | NS         |
| PTSD (NEPEC) at admission               | —          | —     | —      | —          | —           | —           | —          | 17.43     | 17.23 | 16.53 | —          | x           | x           | 0.0001     |
| PTSD (NEPEC) change                     | —          | —     | —      | —          | —           | —           | —          | −1.80     | −1.33 | −1.06 | —          | x           | —           | 0.0008     |
| Violence at admission                   | —          | —     | —      | —          | —           | —           | —          | 1.96      | 1.80  | 1.29  | —          | x           | x           | 0.0001     |
| Violence change                         | —          | —     | —      | —          | —           | —           | —          | −0.68     | −0.91 | −0.54 | —          | —           | x           | 0.0001     |
| Alcohol abuse at admission              | —          | —     | —      | —          | —           | —           | —          | 0.18      | 0.15  | 0.12  | —          | x           | x           | 0.0001     |
| Alcohol abuse change                    | —          | —     | —      | —          | —           | —           | —          | −0.03     | −0.02 | 0.00  | —          | —           | —           | 0.0300     |
| Drug abuse at admission                 | —          | —     | —      | —          | —           | —           | —          | 0.06      | 0.07  | 0.04  | —          | x           | x           | 0.0001     |
| Drug abuse change                       | —          | —     | —      | —          | —           | —           | —          | −0.01     | −0.01 | 0.00  | —          | —           | —           | NS         |
| Work (d) at admission                   | —          | —     | —      | —          | —           | —           | —          | 6.46      | 3.47  | 2.79  | x          | x           | —           | 0.0001     |
| Work (d) change                         | —          | —     | —      | —          | —           | —           | —          | −1.15     | 0.05  | −0.94 | —          | —           | —           | NS         |

\**p* = significance level of overall ANCOVA.x indicates pair of means significantly different at *p* < 0.01.

presence of a medical problem, extent of violent behavior, service connection for PTSD, and both violence and alcohol abuse. Some notable differences became significant after age adjustment, including diagnoses of alcohol abuse/dependence, with VIET veterans showing the highest levels and OIF/OEF veterans the lowest.

### Noncontemporaneous Comparisons (1992–1994)

The effect of equating the time lag from the beginning of hostilities to the presentation for treatment by the OIF/OEF and PER veterans can be seen in the results of the ANCOVAs



**TABLE 2.** OIF/OEF Veterans Versus Contemporaneous PER and VIET Veterans, Controlling for Site and Age

|  | Outpatient |       |        |            |             |             |            | Inpatient |       |       |            |             |             |            |
|--|------------|-------|--------|------------|-------------|-------------|------------|-----------|-------|-------|------------|-------------|-------------|------------|
|  |            |       |        | OIF/OEF    | OIF/OEF     | PER         | <i>p</i> * |           |       |       | OIF/OEF    | OIF/OEF     | PER         | <i>p</i> * |
|  | OIF/OEF    | PER   | VIET   | vs.<br>PER | vs.<br>VIET | vs.<br>VIET |            | OIF/OEF   | PER   | VIET  | vs.<br>PER | vs.<br>VIET | vs.<br>VIET |            |
| <i>N</i>                                   | 6523       | 2376  | 20,170 | —          | —           | —           | —          | 562       | 565   | 6217  | —          | —           | —           | —          |
| Age  | 32.29      | 41.15 | 58.44  | x          | x           | x           | 0.0001     | 34.17     | 41.15 | 57.59 | x          | x           | x           | 0.0001     |
| Female gender                              | 0.11       | 0.10  | 0.00   |            | x           | x           | 0.0001     | 0.06      | 0.06  | 0.00  | —          | x           | x           | 0.0001     |
| White                                      | 0.56       | 0.51  | 0.70   | x          | x           | x           | 0.0001     | 0.51      | 0.49  | 0.65  | —          | x           | x           | 0.0001     |
| African American                           | 0.27       | 0.37  | 0.18   | x          | x           | x           | 0.0001     | 0.33      | 0.37  | 0.23  | —          | x           | x           | 0.0001     |
| Latino                                     | 0.11       | 0.07  | 0.07   | x          | x           |             | 0.0001     | 0.11      | 0.09  | 0.06  | —          | —           | —           | NS         |
| Other ethnicity                            | 0.06       | 0.05  | 0.04   | x          | —           | —           | 0.0200     | 0.05      | 0.05  | 0.06  | —          | —           | —           | NS         |
| Education                                  | 13.81      | 13.61 | 12.53  | x          | x           | x           | 0.0001     | 13.70     | 13.64 | 12.69 | —          | x           | x           | 0.0001     |
| Married                                    | 0.76       | 0.68  | 0.54   | x          | x           | x           | 0.0001     | 0.70      | 0.58  | 0.50  | x          | x           | x           | 0.0001     |
| Separated/divorced                         | 0.18       | 0.30  | 0.29   | x          | x           |             | 0.0001     | 0.26      | 0.39  | 0.38  | x          | x           | —           | 0.0001     |
| Never married                              | 0.04       | 0.00  | 0.15   | x          | x           | x           | 0.0001     | 0.02      | 0.02  | 0.09  |            | x           | x           | 0.0001     |
| Working at admission                       | 0.58       | 0.46  | 0.34   | x          | x           | x           | 0.0001     | 0.30      | 0.14  | 0.14  | x          | x           | —           | 0.0001     |
| Incarcerated (lifetime)                    | 0.00       | 0.19  | 0.36   | x          | x           | x           | 0.0001     | 0.13      | 0.31  | 0.50  | x          | x           | x           | 0.0001     |
| Received fire                              | 0.95       | 0.84  | 0.96   | x          | —           | x           | 0.0001     | 0.97      | 0.90  | 0.94  | x          |             | x           | 0.0001     |
| Participated in atrocities                 | 0.01       | 0.01  | 0.09   | —          | x           | x           | 0.0001     | 0.05      | 0.03  | 0.16  |            | x           | x           | 0.0001     |
| Witnessed atrocities                       | 0.11       | 0.14  | 0.27   | x          | x           | x           | 0.0001     | 0.16      | 0.18  | 0.25  | —          | —           | —           | NS         |
| PTSD diagnosis                             | 0.80       | 0.84  | 0.91   | x          | x           | x           | 0.0001     | 0.99      | 0.97  | 0.97  | —          | —           | —           | NS         |
| Alcohol abuse/dependence<br>diagnosis      | 0.09       | 0.20  | 0.33   | x          | x           | x           | 0.0001     | 0.21      | 0.33  | 0.43  | x          | x           | x           | 0.0001     |
| Drug abuse/dependence<br>diagnosis         | 0.00       | 0.08  | 0.17   | x          | x           | x           | 0.0001     | 0.01      | 0.22  | 0.28  | x          | x           | —           | 0.0001     |
| Comorbid diagnoses                         | 1.51       | 1.91  | 2.03   | x          | x           | x           | 0.0001     | 1.88      | 2.28  | 2.30  | x          | x           | —           | 0.0001     |
| Medical problem                            | 0.64       | 0.79  | 0.77   | x          | x           | —           | 0.0001     | 0.76      | 0.83  | 0.78  | —          | —           | —           | NS         |
| Violent behavior                           | 0.18       | 0.19  | 0.20   | —          | —           | —           | ns         | 0.27      | 0.23  | 0.26  | —          | —           | —           | NS         |
| Suicide attempt (lifetime)                 | —          | —     | —      | —          | —           | —           | —          | 0.16      | 0.35  | 0.39  | x          | x           | —           | 0.0001     |
| Service connected for<br>PTSD              | 0.11       | 0.22  | 0.36   | x          | x           | x           | 0.0001     | 0.49      | 0.55  | 0.62  | —          | x           | —           | 0.0040     |
| Service connected for<br>other psychiatric | 0.05       | 0.08  | 0.03   | x          | x           | x           | 0.0001     | 0.05      | 0.08  | 0.03  | x          |             | x           | 0.0001     |
| Service connected for<br>medical           | 0.51       | 0.68  | 0.45   | x          | x           | x           | 0.0001     | 0.65      | 0.73  | 0.47  | x          | x           | x           | 0.0001     |
| Psychiatric disability (%)                 | 30.91      | 44.56 | 53.51  | x          | x           | x           | 0.0001     | 50.26     | 63.44 | 56.73 | x          | —           | x           | 0.0001     |
| Medical disability (%)                     | 39.75      | 40.02 | 29.55  | —          | x           | x           | 0.0001     | 36.04     | 38.13 | 24.93 | —          | x           | x           | 0.0001     |
| Length of stay (d)                         | —          | —     | —      | —          | —           | —           | —          | 47.17     | 48.96 | 49.10 | —          | —           | —           | NS         |
| Satisfaction                               | —          | —     | —      | —          | —           | —           | —          | 16.40     | 16.58 | 16.09 | —          | —           | —           | NS         |
| PTSD (miss.) at admission                  | —          | —     | —      | —          | —           | —           | —          | 37.62     | 38.91 | 39.39 | x          | x           | —           | 0.0001     |
| PTSD (miss.) change                        | —          | —     | —      | —          | —           | —           | —          | −1.43     | −2.22 | −1.64 | —          | —           | —           | NS         |
| PTSD (NEPEC) at<br>admission               | —          | —     | —      | —          | —           | —           | —          | 16.72     | 16.75 | 16.64 | —          | —           | —           | NS         |
| PTSD (NEPEC) change                        | —          | —     | —      | —          | —           | —           | —          | −1.59     | −1.20 | −1.08 | —          | —           | —           | NS         |
| Violence at admission                      | —          | —     | —      | —          | —           | —           | —          | 1.20      | 1.30  | 1.40  | —          | —           | —           | NS         |
| Violence change                            | —          | —     | —      | —          | —           | —           | —          | −0.35     | −0.68 | −0.59 | —          | —           | —           | NS         |
| Alcohol abuse at<br>admission              | —          | —     | —      | —          | —           | —           | —          | 0.13      | 0.12  | 0.13  | —          | —           | —           | NS         |
| Alcohol abuse change                       | —          | —     | —      | —          | —           | —           | —          | −0.03     | −0.02 | 0.00  | —          | —           | —           | NS         |
| Drug abuse at admission                    | —          | —     | —      | —          | —           | —           | —          | 0.02      | 0.04  | 0.05  | x          | x           | —           | 0.0004     |
| Drug abuse change                          | —          | —     | —      | —          | —           | —           | —          | 0.01      | 0.00  | 0.00  | —          | —           | —           | NS         |
| Work (d) at admission                      | —          | —     | —      | —          | —           | —           | —          | 6.14      | 3.28  | 2.80  | —          | —           | —           | 0.0001     |
| Work (d) change                            | —          | —     | —      | —          | —           | —           | —          | −1.33     | −0.08 | −0.92 | —          | —           | —           | NS         |

\**p* = significance level of overall ANCOVA.x indicates pair of means significantly different at *p* < 0.01.

for noncontemporaneous samples in Table 3. When compared with the results in Table 1, notable differences can be seen in the number of significant differences among pairs of means (excluding age) for war eras, particularly for OIF/OEF versus PER. For outpatient veterans, the number of significant differences for OIF/OEF versus PER drops from 20 in

Table 1 to 15 in Table 3. This compares to smaller declines of 23 to 21 for OIF/OEF versus VIET and 21 to 20 for PER versus VIET.

Among inpatient veterans, the number of significant differences for OIF/OEF versus PER drops even more, from 16 to 8, compared with an increase from 23 to 24 for

**TABLE 3.** OIF/OEF Veterans Versus Noncontemporaneous PER and VIET Veterans, Controlling for Site

|  | Outpatient |       |        |            |             |             |            | Inpatient |       |       |            |             |             |            |
|--|------------|-------|--------|------------|-------------|-------------|------------|-----------|-------|-------|------------|-------------|-------------|------------|
|  |            |       |        | OIF/OEF    | OIF/OEF     | PER         | <i>p</i> * |           |       |       | OIF/OEF    | OIF/OEF     | PER         | <i>p</i> * |
|  | OIF/OEF    | PER   | VIET   | vs.<br>PER | vs.<br>VIET | vs.<br>VIET |            | OIF/OEF   | PER   | VIET  | vs.<br>PER | vs.<br>VIET | vs.<br>VIET |            |
| <i>N</i>                                   | 6523       | 1045  | 17,094 | —          | —           | —           | —          | 562       | 116   | 5909  | —          | —           | —           | —          |
| Age  | 32.48      | 32.26 | 46.26  | —          | x           | x           | 0.0001     | 34.18     | 32.25 | 46.61 | x          | x           | x           | 0.0001     |
| Female gender                              | 0.11       | 0.12  | 0.00   | —          | x           | x           | 0.0001     | 0.03      | 0.14  | 0.00  | x          | x           | x           | 0.0001     |
| White                                      | 0.64       | 0.67  | 0.71   | —          | x           | x           | 0.0001     | 0.66      | 0.61  | 0.66  | —          | —           | —           | NS         |
| African American                           | 0.19       | 0.22  | 0.20   | —          | —           | —           | NS         | 0.16      | 0.31  | 0.25  | x          | x           | —           | 0.0001     |
| Latino                                     | 0.11       | 0.06  | 0.06   | x          | x           | —           | 0.0001     | 0.11      | 0.01  | 0.04  | x          | x           | —           | 0.0001     |
| Other ethnicity                            | 0.05       | 0.05  | 0.04   | —          | x           | x           | 0.0001     | 0.06      | 0.07  | 0.06  | —          | —           | —           | NS         |
| Education                                  | 12.95      | 12.90 | 12.78  | —          | x           | —           | 0.0001     | 12.76     | 12.69 | 12.73 | —          | —           | —           | NS         |
| Married                                    | 0.50       | 0.45  | 0.46   | x          | x           | —           | 0.0001     | 0.46      | 0.36  | 0.38  | —          | x           | —           | 0.0060     |
| Separated/divorced                         | 0.19       | 0.29  | 0.45   | x          | x           | x           | 0.0001     | 0.26      | 0.32  | 0.50  | —          | x           | x           | 0.0001     |
| Never married                              | 0.30       | 0.26  | 0.08   | x          | x           | x           | 0.0001     | 0.28      | 0.32  | 0.10  | —          | x           | x           | 0.0001     |
| Working at admission                       | 0.61       | 0.58  | 0.30   | —          | x           | x           | 0.0001     | 0.29      | 0.24  | 0.14  | —          | x           | x           | 0.0001     |
| Incarcerated (lifetime)                    | 0.12       | 0.24  | 0.54   | x          | x           | x           | 0.0001     | 0.30      | 0.37  | 0.64  | —          | x           | x           | 0.0001     |
| Received fire                              | 0.95       | 0.74  | 0.97   | x          | x           | x           | 0.0001     | 0.95      | 0.77  | 0.97  | x          | —           | x           | 0.0001     |
| Participated in atrocities                 | 0.05       | 0.06  | 0.24   | —          | x           | x           | 0.0001     | 0.10      | 0.12  | 0.38  | —          | x           | x           | 0.0001     |
| Witnessed atrocities                       | 0.14       | 0.11  | 0.35   | —          | x           | x           | 0.0001     | 0.21      | 0.15  | 0.35  | —          | x           | x           | 0.0001     |
| PTSD diagnosis                             | 0.79       | 0.55  | 0.80   | x          | —           | x           | 0.0001     | 0.97      | 0.79  | 0.92  | x          | x           | x           | 0.0001     |
| Alcohol abuse/dependence<br>diagnosis      | 0.21       | 0.34  | 0.54   | x          | x           | x           | 0.0001     | 0.42      | 0.51  | 0.62  | —          | x           | —           | 0.0001     |
| Drug abuse/dependence<br>diagnosis         | 0.06       | 0.16  | 0.30   | x          | x           | x           | 0.0001     | 0.22      | 0.30  | 0.41  | —          | x           | —           | 0.0001     |
| Comorbid diagnoses                         | 1.76       | 2.02  | 2.62   | x          | x           | x           | 0.0001     | 2.41      | 2.51  | 2.73  | —          | x           | —           | 0.0001     |
| Medical problem                            | 0.47       | 0.44  | 0.60   | —          | x           | x           | 0.0001     | 0.51      | 0.42  | 0.58  | —          | x           | x           | 0.0002     |
| Violent behavior                           | 0.22       | 0.42  | 0.38   | x          | x           | —           | 0.0001     | 0.34      | 0.35  | 0.34  | —          | —           | —           | NS         |
| Suicide attempt (lifetime)                 | —          | —     | —      | —          | —           | —           | —          | 0.29      | 0.43  | 0.54  | —          | x           | —           | 0.0001     |
| Service connected for<br>PTSD              | 0.13       | 0.09  | 0.30   | x          | x           | x           | 0.0001     | 0.34      | 0.19  | 0.47  | x          | x           | x           | 0.0001     |
| Service connected for<br>other psychiatric | 0.04       | 0.02  | 0.05   | x          | —           | x           | 0.0001     | 0.05      | 0.03  | 0.03  | —          | —           | —           | NS         |
| Service connected for<br>medical           | 0.33       | 0.28  | 0.39   | x          | x           | x           | 0.0001     | 0.39      | 0.30  | 0.35  | —          | —           | —           | NS         |
| Psychiatric disability (%)                 | 37.99      | 28.52 | 40.87  | —          | —           | x           | 0.0004     | 46.97     | 32.75 | 41.43 | —          | —           | —           | 0.0200     |
| Medical disability (%)                     | 28.47      | 17.41 | 22.18  | x          | x           | x           | 0.0001     | 26.80     | 20.29 | 20.00 | —          | x           | —           | 0.0004     |
| Length of stay (d)                         | —          | —     | —      | —          | —           | —           | —          | 45.86     | 52.66 | 59.52 | —          | x           | —           | 0.0001     |
| Satisfaction                               | —          | —     | —      | —          | —           | —           | —          | —         | —     | —     | —          | —           | —           | NA         |
| PTSD (miss.) at admission                  | —          | —     | —      | —          | —           | —           | —          | 39.31     | 40.65 | 41.22 | —          | x           | —           | 0.0001     |
| PTSD (miss.) change                        | —          | —     | —      | —          | —           | —           | —          | −2.51     | −1.15 | −1.41 | —          | —           | —           | NS         |
| PTSD (NEPEC) at<br>admission               | —          | —     | —      | —          | —           | —           | —          | 17.59     | 16.59 | 17.14 | x          | x           | —           | 0.0001     |
| PTSD (NEPEC) change                        | —          | —     | —      | —          | —           | —           | —          | −2.46     | 0.86  | −0.65 | x          | x           | x           | 0.0001     |
| Violence at admission                      | —          | —     | —      | —          | —           | —           | —          | 1.84      | 1.97  | 1.94  | —          | —           | —           | NS         |
| Violence change                            | —          | —     | —      | —          | —           | —           | —          | −0.60     | −0.51 | −0.44 | —          | —           | —           | NS         |
| Alcohol abuse at<br>admission              | —          | —     | —      | —          | —           | —           | —          | 0.16      | 0.18  | 0.21  | —          | x           | —           | 0.0001     |
| Alcohol abuse change                       | —          | —     | —      | —          | —           | —           | —          | −0.04     | −0.04 | −0.04 | —          | —           | —           | NS         |
| Drug abuse at admission                    | —          | —     | —      | —          | —           | —           | —          | 0.06      | 0.07  | 0.09  | —          | x           | —           | 0.0001     |
| Drug abuse change                          | —          | —     | —      | —          | —           | —           | —          | −0.01     | 0.00  | −0.01 | —          | —           | —           | NS         |
| Work (d) at admission                      | —          | —     | —      | —          | —           | —           | —          | —         | —     | —     | —          | —           | —           | NA         |
| Work (d) change                            | —          | —     | —      | —          | —           | —           | —          | —         | —     | —     | —          | —           | —           | NA         |

\**p* = significance level of overall ANCOVA.x indicate pair of means significantly different at *p* < 0.01.

OIF/OEF versus VIET and a decline from 22 to 12 for PER versus VIET. Using the earlier dates for PER and VIET to equate the time lag, therefore, eliminated significant differences between OIF/OIF and PER veterans with

regard to white ethnicity, years of education, working, having a medical problem, incidence of a suicide attempt, and percent psychiatric disability. Further, equating the time lag mitigated the differences between OIF/OEF and

PER veterans with regard to African American ethnicity, incarceration, and service connection for a psychiatric disorder other than PTSD and a medical disorder.

Finally, the effects of adding veterans' age to the preceding ANCOVAs for noncontemporaneous samples are

presented in Table 4. Comparison with Table 3 reveals little difference in the pattern of significant means for pairs of war eras among outpatient veterans. Among inpatient veterans, whereas the pattern for the OIF/OEF versus PER comparison is unchanged, with 8 differences, the number of significant

**TABLE 4.** OIF/OEF Veterans Versus Noncontemporaneous PER and VIET Veterans, Controlling for Site and Age

|  | Outpatient |       |        |            |             |             |            | Inpatient |       |       |            |             |             |            |
|--|------------|-------|--------|------------|-------------|-------------|------------|-----------|-------|-------|------------|-------------|-------------|------------|
|  |            |       |        | OIF/OEF    | OIF/OEF     | PER         | <i>p</i> * |           |       |       | OIF/OEF    | OIF/OEF     | PER         | <i>p</i> * |
|  | OIF/OEF    | PER   | VIET   | vs.<br>PER | vs.<br>VIET | vs.<br>VIET |            | OIF/OEF   | PER   | VIET  | vs.<br>PER | vs.<br>VIET | vs.<br>VIET |            |
| <i>N</i>                                   | 6523       | 1045  | 17,094 | —          | —           | —           | —          | 562       | 116   | 5909  | —          | —           | —           | —          |
| Age  | 32.48      | 32.26 | 46.26  | —          | x           | x           | 0.0001     | 34.18     | 32.25 | 46.61 | x          | x           | x           | 0.0001     |
| Female gender                              | 0.11       | 0.12  | 0.00   | —          | x           | x           | 0.0001     | 0.05      | 0.17  | 0.00  | x          | x           | x           | 0.0001     |
| White                                      | 0.62       | 0.65  | 0.72   | —          | x           | x           | 0.0001     | 0.60      | 0.54  | 0.66  | —          | —           | x           | 0.0100     |
| African American                           | 0.22       | 0.25  | 0.19   | —          | x           | x           | 0.0001     | 0.22      | 0.38  | 0.24  | x          | —           | x           | 0.0007     |
| Latino                                     | 0.11       | 0.05  | 0.06   | x          | x           | —           | 0.0001     | 0.11      | 0.00  | 0.04  | x          | x           | —           | 0.0001     |
| Other ethnicity                            | 0.05       | 0.05  | 0.04   | —          | x           | —           | 0.0001     | 0.07      | 0.08  | 0.06  | —          | —           | —           | NS         |
| Education                                  | 13.37      | 13.33 | 12.59  | —          | x           | x           | 0.0001     | 13.27     | 13.28 | 12.66 | —          | x           | x           | 0.0001     |
| Married                                    | 0.62       | 0.58  | 0.40   | x          | x           | x           | 0.0001     | 0.55      | 0.47  | 0.37  | —          | x           | —           | 0.0001     |
| Separated/divorced                         | 0.21       | 0.30  | 0.44   | x          | x           | x           | 0.0001     | 0.30      | 0.36  | 0.50  | —          | x           | x           | 0.0001     |
| Never married                              | 0.16       | 0.12  | 0.15   | x          | —           | —           | 0.0001     | 0.15      | 0.16  | 0.12  | —          | —           | —           | NS         |
| Working at admission                       | 0.63       | 0.60  | 0.28   | —          | x           | x           | 0.0001     | 0.29      | 0.24  | 0.14  | —          | x           | x           | 0.0001     |
| Incarcerated (lifetime)                    | 0.07       | 0.18  | 0.57   | x          | x           | x           | 0.0001     | 0.20      | 0.25  | 0.66  | —          | x           | x           | 0.0001     |
| Received fire                              | 0.94       | 0.73  | 0.97   | x          | x           | x           | 0.0001     | 0.96      | 0.78  | 0.97  | x          | —           | x           | 0.0001     |
| Participated in atrocities                 | 0.02       | 0.03  | 0.26   | —          | x           | x           | 0.0001     | 0.07      | 0.09  | 0.38  | —          | x           | x           | 0.0001     |
| Witnessed atrocities                       | 0.14       | 0.11  | 0.35   | —          | x           | x           | 0.0001     | 0.20      | 0.14  | 0.35  | —          | x           | x           | 0.0001     |
| PTSD diagnosis                             | 0.79       | 0.55  | 0.80   | x          | —           | x           | 0.0001     | 0.99      | 0.81  | 0.92  | x          | x           | x           | 0.0001     |
| Alcohol abuse/dependence<br>diagnosis      | 0.16       | 0.29  | 0.56   | x          | x           | x           | 0.0001     | 0.35      | 0.42  | 0.63  | —          | x           | x           | 0.0001     |
| Drug abuse/dependence<br>diagnosis         | 0.00       | 0.09  | 0.33   | x          | x           | x           | 0.0001     | 0.05      | 0.11  | 0.43  | —          | x           | x           | 0.0001     |
| Comorbid diagnoses                         | 1.64       | 1.90  | 2.68   | x          | x           | x           | 0.0001     | 2.15      | 2.22  | 2.76  | —          | x           | x           | 0.0001     |
| Medical problem                            | 0.58       | 0.55  | 0.55   | —          | x           | —           | 0.0300     | 0.66      | 0.59  | 0.56  | —          | x           | —           | 0.0050     |
| Violent behavior                           | 0.18       | 0.37  | 0.41   | x          | x           | —           | 0.0001     | 0.27      | 0.27  | 0.34  | —          | x           | —           | 0.0300     |
| Suicide attempt (lifetime)                 | —          | —     | —      | —          | —           | —           | —          | 0.21      | 0.33  | 0.56  | —          | x           | x           | 0.0001     |
| Service connected for<br>PTSD              | 0.13       | 0.08  | 0.30   | x          | x           | x           | 0.0001     | 0.38      | 0.23  | 0.47  | x          | x           | x           | 0.0001     |
| Service connected for<br>other psychiatric | 0.05       | 0.02  | 0.05   | x          | —           | x           | 0.0020     | 0.06      | 0.05  | 0.03  | —          | x           | —           | 0.0200     |
| Service connected medical                  | 0.41       | 0.36  | 0.35   | x          | x           | —           | 0.0001     | 0.53      | 0.46  | 0.34  | —          | x           | x           | 0.0001     |
| Psychiatric disability (%)                 | 35.90      | 26.64 | 41.28  | —          | x           | x           | 0.0001     | 49.62     | 35.56 | 41.15 | —          | x           | —           | 0.0040     |
| Medical disability (%)                     | 35.58      | 22.68 | 20.30  | x          | x           | —           | 0.0001     | 31.16     | 25.22 | 19.20 | —          | x           | —           | 0.0001     |
| Length of stay (d)                         | —          | —     | —      | —          | —           | —           | —          | 47.93     | 55.27 | 59.13 | —          | x           | —           | 0.0001     |
| Satisfaction                               | —          | —     | —      | —          | —           | —           | —          | —         | —     | —     | —          | —           | —           | NA         |
| PTSD (miss.) at admission                  | —          | —     | —      | —          | —           | —           | —          | 38.75     | 39.93 | 41.31 | —          | x           | —           | 0.0001     |
| PTSD (miss.) Change                        | —          | —     | —      | —          | —           | —           | —          | −2.66     | −1.34 | −1.39 | —          | —           | —           | NS         |
| PTSD (NEPEC) at<br>admission               | —          | —     | —      | —          | —           | —           | —          | 17.46     | 16.42 | 17.16 | x          | —           | —           | 0.0030     |
| PTSD (NEPEC) Change                        | —          | —     | —      | —          | —           | —           | —          | −2.41     | 0.93  | −0.66 | x          | x           | x           | 0.0001     |
| Violence at admission                      | —          | —     | —      | —          | —           | —           | —          | 1.43      | 1.48  | 2.01  | —          | x           | x           | 0.0001     |
| Violence change                            | —          | —     | —      | —          | —           | —           | —          | −0.42     | −0.29 | −0.46 | —          | —           | —           | NS         |
| Alcohol abuse at<br>admission              | —          | —     | —      | —          | —           | —           | —          | 0.14      | 0.16  | 0.22  | —          | x           | —           | 0.0001     |
| Alcohol abuse change                       | —          | —     | —      | —          | —           | —           | —          | −0.04     | −0.05 | −0.04 | —          | —           | —           | NS         |
| Drug abuse at admission                    | —          | —     | —      | —          | —           | —           | —          | 0.04      | 0.04  | 0.09  | —          | x           | x           | 0.0001     |
| Drug abuse change                          | —          | —     | —      | —          | —           | —           | —          | 0.00      | 0.02  | −0.02 | —          | —           | —           | NS         |
| Work (d) at admission                      | —          | —     | —      | —          | —           | —           | —          | —         | —     | —     | —          | —           | —           | NA         |
| Work (d) change                            | —          | —     | —      | —          | —           | —           | —          | —         | —     | —     | —          | —           | —           | NA         |

\**p* = significance level of overall ANCOVA.

x indicates pair of means significantly different at *p* < 0.01.

differences increases for both the OIF/OEF versus VIET (from 24 to 27) and the PER versus VIET (from 12 to 20) comparisons. Controlling for age, therefore, had no effect on the extent of the differences between OIF/OEF and PER veterans, but had the effect of accentuating the differences between VIET veterans and both OIF/OEF and PER veterans.

## DISCUSSION

A question that is commonly raised is how the experiences of veterans of recent wars differ from those of veterans of previous wars. Three features clearly differentiating veterans of different war eras in this study are simple sociodemographic characteristics, the age, gender, and ethnicity of the troops. There were virtually no women in the Vietnam treatment cohorts, but women comprised 10%–13% of the outpatient veterans and 3%–4% of the inpatient veterans in the Iraq/Afghanistan and Persian Gulf cohorts. The gender difference reflect changes in the recruitment policies of the armed services and, to a lesser extent, the development of specialized programs for female veterans by the VA. The second sociodemographic feature is the ethnic composition of the troops. The Iraq/Afghanistan cohorts were composed of a higher percentage of Latino veterans than the other cohorts.

The nature of traumatic exposure appears to have differed among the war eras. Compared with veterans from other war eras, Persian Gulf veterans reported proportionally less exposure to hostile/friendly fire, whereas Vietnam veterans reported proportionally more exposure to atrocities, whether participating in or witnessing them. Vietnam veterans might have reported a much greater exposure to atrocities than Iraq/Afghanistan veterans because such atrocities were more common and/or occupied a more prominent role in the public discourse about that war.

War era of military service appears to differentiate veterans in their clinical status as well. In most comparisons, Persian Gulf veterans were diagnosed with PTSD proportionally less and were less likely to be service connected for PTSD than Iraq/Afghanistan and Vietnam veterans, perhaps reflecting the far shorter duration of hostilities in that war. Some other comparisons were inconclusive. For instance, among outpatients, Iraq/Afghanistan veterans were diagnosed with PTSD proportionally less than Vietnam veterans; but, among inpatients, Iraq/Afghanistan veterans were diagnosed with PTSD proportionally more than Vietnam veterans. Further, the severity of PTSD symptoms varied across the war eras.

With regard to other pathology, Iraq/Afghanistan veterans were less severely disturbed behaviorally and psychologically than veterans from other war eras. They had fewer comorbid disorders and suicide attempts, and less frequent diagnoses and intensity of substance use. Drug abuse was also lower among Iraq/Afghanistan veterans especially compared with Vietnam veterans, and those Iraq/Afghanistan veterans who presented for specialized PTSD treatment were at lower risk for medical problems. Those who did have medical disabilities, however, generally had a higher percent disability than veterans of other eras.

The contemporaneous comparison of veterans across war eras and without adjustment for age presents a picture of

the patient populations as they have been actually encountered by VA staff. Iraq/Afghanistan veterans differ importantly from veterans from previous wars in being younger, less often separated or divorced, more often working, and less often having a history of incarceration. When adjustment is made for age, Iraq/Afghanistan veterans are more often married than are veterans of previous wars. Taken as a whole, these differences suggest that the greater youth, social support and social integration of Iraq/Afghanistan veterans equip them with more social assets with which to cope with adversity than their current counterparts from other wars.

A risk of erosion of adaptive capacities over time is suggested by the greater number of significant advantages among Iraq/Afghanistan veterans when compared with older contemporaneous Persian Gulf veterans, in contrast to the lack of differences in the parallel, age-matched comparison with noncontemporaneous Persian Gulf veterans. Specifically, in noncontemporaneous comparisons, not only do Iraq/Afghanistan veterans have no advantage in youthfulness, but they are not working more often regardless of outpatient or inpatient status; and, among inpatients, they are not significantly more often married, less often separated or divorced, or less often incarcerated than Persian Gulf veterans. The possibility of pathogenic effects from an erosion of personal assets is suggested further by a study of risk factors for PTSD following military service (Schnurr et al., 2004). That study found that the occurrence of stressful life events and the weakness of social and emotional support after military service were associated significantly with the maintenance of PTSD symptoms. An important caveat to this interpretation is that we cannot be sure that the contemporaneous sample of Persian Gulf veterans consists of the same type of veterans as the noncontemporaneous Persian Gulf veterans. It is possible that the contemporaneous Persian Gulf veterans represent a segment of the Persian Gulf veteran population that had less adaptive capacities from the beginning.

We have focused our discussion, thus far, on identifying differences among veterans of different war eras with an eye toward identifying relevant implications for treatment delivery and planning. We conclude by addressing 3 more general issues that informed the overall framework of our analyses. The first is that comparisons of Iraq/Afghanistan veterans with noncontemporaneous cohorts of veterans from the PER and VIET showed many fewer differences between Iraq/Afghanistan and Persian Gulf veterans than in the comparable comparisons with contemporaneous veterans. It is also notable that we did not observe a similar reduction of differences between Iraq/Afghanistan veterans and Vietnam veterans when contrasting the findings from contemporaneous and noncontemporaneous cohorts. Historical proximity to the war, therefore, appears to be a powerful equalizer between veterans of different eras, suggesting that there is a commonality to war zone service that is detrimental in many of the same ways.

The second general issue concerns veterans' treatment status. As we expected, severity of disorders was greater among inpatients than among outpatients. This greater overall severity seemed to override war era differences in that we



found fewer differences across different war eras among inpatients than among outpatients.

A third issue concerns the inclusion of age as a covariate in the analyses. Age proved to be significant in many of the comparisons, suggesting that it has an important mediating role. Most of the differences, however, remained significant after adjusting for age, leaving opportunity for other factors to play mediating roles in the time interval between war zone exposure and presentation for treatment as well. The study by Schnurr et al. (2004), for example, provides some indications of postmilitary, psychological, and social factors that are likely to shape long-term outcomes. Further research identifying factors that put veterans at risk for poorer long-term outcomes would be very helpful in expanding our understanding of the long-term course of PTSD and, perhaps, other psychiatric disorders as well.

It is also important to call attention to 2 notable limitations of our study. The first is that the samples were not drawn randomly from the veteran population. Rather, they were convenience samples of veterans who presented for treatment in specialized PTSD programs within the VA. The generalizability of our results to the hundreds of thousands of veterans treated for PTSD in general VA mental health programs, in primary care programs, or outside of VA treatment programs altogether, is unknown. The national scope and large size of our samples, in contrast, are strengths which contribute to the stability of the findings.

The second limitation is that our samples of Iraq/Afghanistan veterans came primarily from the first cohort of troops who fought in the Iraq war. The available samples do not include many veterans who served during the more intense, recent phase of the insurgency, nor are they likely to include many veterans who served multiple tours. There are some indications that multiple tours exacerbate mental health problems (Mental Health Advisory Team IV, 2006). It is unknown therefore how later troops might compare with earlier ones, and this possibility presents an important task for future study.

## CONCLUSIONS

The most consistent differences observed between Iraq/Afghanistan veterans and those of earlier eras concern the youth and better social adjustment of the former. Preserving and capitalizing on these assets should be a major goal of treatment in the years to come.

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